

## ABSTRACT

A system for repairing roads is provided. The system includes a highly strain tolerant, substantially impermeable, reflective crack relief interlayer. The interlayer includes a polymer modified asphalt binder mixed with a dense fine aggregate mixture. About 100% of the aggregate should be able to pass through about a 9.5 mm sieve. The interlayer mix is designed using volumetrics and verified using a Flexural Beam Fatigue test and a Hveem Stability test. Preferably, an HMA overlay that is compatible with the interlayer, as well as the demands of local traffic, is placed over the interlayer so that a protected, smooth road surface is provided. The system may delay the first appearance of cracks and the severity of cracks for several years compared with traditional hot mix overlays and extend pavement service life.